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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,647	03/16/2004	Jun Watanabe	250443US3	1153

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EXAMINER	
MUSSER, BARBARA J	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/800,647	WATANABE ET AL.	
	Examiner	Art Unit	
	Barbara J. Musser	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/29/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claim 20 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/3/06.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2, 4, 5, 9-13, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, it is unclear what is meant by the transfer surface being pushed to the plastic laminate member. It is unclear if this means a portion of the mold is movable relative to the remainder of the mold so that the transfer surface is pushed against the laminate member or if this means simply that the mold is pressed against the laminate member. For the purposes of examination, this is considered to mean that that mold is simply pressed against the laminate member.

Regarding claims 4 and 5, it is unclear whether the "thin wall part" of the laminate member is intended to be thinner than the remainder of the laminate member or if the entire member can be thin. It is unclear exactly what is occurring as applicant's specification and claim indicate the thin wall is part of the laminate member but the

description of how it functions suggests that excess plastic from the laminate member moves to this thin wall part and the specification indicates the excess plastic moves into the substrate in some manner(Figures 4A and 4B). Therefore, it is unclear whether the thin wall is part of the laminate member or the substrate, particularly since Figure 9, showing this embodiment, does not show the laminate member has having a thin wall, but appears to show the substrate having the thin wall.

Regarding claim 9, it is unclear if the claim positively requires the step of molding the substrate since it indicates foaming occurs "when the plastic substrate is molded" but the independent claim does not mold the substrate.

Regarding claim 10, it is unclear what is meant by the mold being pushed with pressure. It is unclear if this means a portion of the mold is movable relative to the remainder of the mold so that during molding, the mold is pushed against either the substrate or laminate member, or if this means simply that the mold is pressed against the laminate member. For the purposes of examination, this is considered to mean that that mold is simply pressed against the laminate member, i.e. that the closing of the mold applies pressure to the laminate member.

Regarding claims 13 and 17, it is unclear what is materials meet the claim requirements as it is unclear what the dielectric constant and dielectric tangent are dependent on, i.e. it is unclear if they vary based on average molecular weight of the plastic, thickness of the plastic, melting point of the plastic, etc. As examiner does not have access to a list of which plastic meet the claim limitations, applicant is asked to

provide a list. For the purposes of examination, this claim is considered to require that the plastic laminate member has a lower melting point than the honeycomb.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekiguchi et al.(U.S. Patent 5,041,182).

Sekiguchi et al. discloses a method of forming a composite wherein a resin layer is placed in a mold and a plastic honeycomb member is placed on the resin layer, and the combination is molded.(Col. 3, ll. 25; Col. 4, ll. 62-64; Col. 5, ll. 5) Since the honeycomb has spaces contacting the resin layer, any excess resin in the resin layer would be flow into the honeycomb member. It is noted that the claim does not require the escape part to be more than one of the cells of the honeycomb. One in the art would understand that the mold surface would have the shape of the desired configuration of the composite since the purpose of the mold is to help shape the composite into its desired shape.

Regarding claim 10, since the resin layers are made of thermosetting materials(Col. 5, l. 9-11) one in the art would understand that during the heating to set the resin, the resin would flow and therefore be softened.

6. Claims 1-3, 10, 14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoner(U.S. Patent 3,097,982).

Stoner discloses a method of forming a composite wherein a resin layer is placed in a mold, an adhesive layer is placed on the resin layer, a plastic honeycomb member is placed on the adhesive layer, and the combination is molded.(Col. 3, ll. 38-60; Col. 4, ll. 4-14) The honeycomb can be made of cloth impregnated with plastic.(Col. 4, ll. 4-6) Since the honeycomb has spaces contacting the adhesive layer, any excess adhesive in the adhesive layer would be flow into the honeycomb member. It is noted that the claim does not require the escape part to be more than one of the cells of the honeycomb. One in the art would understand that the mold surface would have the shape of the desired configuration of the composite since the purpose of the mold is to help shape the composite into its desired shape, particularly since Stoner discloses the resin layers can still be deformed.(Col. 3, ll. 43-46)

Regarding claim 10, since the resin layers can be deformed(Col. 3, ll. 43-46), one in the art would understand that during the heating to set the resin, the resin would flow and therefore be softened.

Regarding claims 14 and 18, Stoner discloses an intermediate adhesive layer between the resin layer and the honeycomb made of phenolic resin.(Col. 4, ll. 3-14) The phenolic resin is a heat curable resin.

7. Claims 1-3 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujii(U.S. Patent 4,124,421).

Fujii discloses a method of forming a laminate wherein a thermoplastic liner(24) is applied to a porous buffer layer(24) and a molding surface is pressed against them to form an article.(Figure 3) Since the porous layer has spaces contacting the thermoplastic layer, any excess thermoplastic would be flow into the porous layer. One in the art would understand that the mold surface would have the shape of the desired configuration of the composite since the purpose of the mold is to help shape the composite into its desired shape.

Regarding claims 8 and 9, the buffer layer can be cloth or foam made of polyester.(Col. 2, ll. 1-2; Col. 4, ll. 1-4)

Regarding claim 10, since the resin layers can be deformed(Figure 5), one in the art would understand that during the heating to set the resin, the resin would flow and therefore be softened.

Regarding claim 11, Fujii discloses the buffer layer has a melting temperature below that of the thermoplastic liner.(Col. 4, ll. 1-10) The article can be heated to 160C which is lower than the upper limit of the buffer(substrate) softening temperature but below that of the thermoplastic liner since it is several tens of degrees below that of the buffer.(Col. 4, ll. 1-10)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. as applied to claim 1 above, and further in view of Ishikawa(U.S. Patent 6,565,785).

Sekiguchi et al. does not disclose how the thermoplastic honeycomb is formed. Ishikawa discloses forming a thermoplastic honeycomb by injecting resin into a mold having a plurality of pins, applied predetermined pressure, and forming the honeycomb.(Col. 2, ll. 30-49) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Ishikawa to make the honeycomb used in Sekiguchi et al. since Ishikawa et al. shows how to make a large quantity of honeycomb inexpensively in a short period of time.(Col. 1, ll. 22-29)

Regarding claim 7, while Ishikawa does not disclose applying gas to the interface of the pins and resin before removing the mold, it would have been obvious to do so since this would release the pins from the resin.

10. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoner as applied to claims 1 and 14 above, and further in view of Hudson(U.S. Patent 4,249,976).

Stoner does not disclose the adhesive is a thermoplastic. Hudson discloses using a thermoplastic adhesive in combination with a thermosetting skin to provide firm bonding between the skin and the honeycomb.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the thermosetting adhesive of Stoner with a thermoplastic adhesive since it would improve

efficiency and bond line strength.(Abstract; Col. 1, ll. 21-27) While the reference does not indicate the relationship of the melting point of the adhesive and the honeycomb, one in the art would appreciate that the melting point of the adhesive would be lower than that of the honeycomb as otherwise the honeycomb would deform during the bonding process.

11. Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoner as applied to claims 1 and 14 above, and further in view of Roberts(U.S. Patent 3,953,056).

The references cited above do not disclose heating the adhesive with dielectric heating. Roberts discloses dielectric heating can heat the adhesive from outside the article, i.e. without substantial heating of other layers.(claim 10) It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the layers that are to be softened with dielectric heating since this would allow heating of the layers which are to be softened without substantially heating the layers that are not desired to be softened.(claim 10)

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoner as applied to claim 14 above, and further in view of Fujimoto et al.(U.S. Patent 4,379,039).

Stoner does not disclose the adhesive is an ultraviolet curable adhesive. Fujimoto et al. discloses an ultraviolet curable adhesive with excellent adhesion and processability.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ultraviolet curable adhesive of Fujimoto et

al. as the adhesive in Stoner since the adhesive of Fujimoto et al. has excellent processability and adhesion.(Abstract)

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii.

While Fujii does not disclose the thickness of the thermoplastic liner, one in the art would appreciate that it would be relatively since it is intended to be a liner, which is conventionally a very thin film. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the thermoplastic liner have a thickness of less than 0.5 mm since plastic films are often thin and since liners are conventionally very thin.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara J. Musser whose telephone number is (571) 272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJM

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